

# PHILADELPHIA ELECTRIC COMPANY

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August 19, 1982

Docket Nos. 50-277  
50-278

Insp. Nos. 50-277/82-08  
50-278/82-08

Mr. T. T. Martin, Director  
Division of Engineering and Technical Programs  
U.S. Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

Dear Mr. Martin:

Your letter of July 19, 1982, forwarded combined Inspection Report 50-277/82-08 and 50-278/82-08. Appendix A addresses several items which do not appear to be in full compliance with Nuclear Regulatory Commission requirements. Items B, C, and E in Appendix A identify violations associated with eddy current testing of the reactor water cleanup heat exchanger. We have addressed these items in a single response. Items A and D are addressed individually.

- A. Technical Specification 6.11 requires that procedures for personnel radiation protection be prepared consistent with 10CFR20 and be adhered to for all operations involving personnel radiation exposure.

Contrary to the above:

1. In March, 1982, an employee failed to follow radiation protection procedure HPO/CO-10a, Revision 3, "Conduct in Controlled Areas", which prohibits tampering with personnel dosimetry devices. The employee purposely tampered with a co-worker's dosimetry device, resulting in a significant error in reported exposure, i.e., 9.175 rem reported, versus 0.24 rem actually received.
2. On April 28, 1982, an employee failed to follow radiation protection procedure HPO/CO-4, Revision 17, "Radiation Work Permits", which specifies that workers must comply with all conditions and prescriptions of Radiation Work Permits (RWP). The employee did not comply with protective clothing requirements of RWP No. 2-94-0247, which required full anti-contamination clothing and respiratory protective devices, but rather wore only shoe covers and gloves in a radiologically controlled area.

This is a Severity Level IV violation (Supplement IV).

RESPONSE

1. As reported in LER 2-82-10/lx, an investigation was conducted to explain the overexposed TLD badge reported to Peach Bottom Atomic Power Station by the Eberline Instrument Corporation on April 13, 1982.

The investigation was conducted by station personnel and a special investigator from Philadelphia Electric Company Security. An interview was conducted with the person whose name was on the badge. He could not explain how the exposure occurred and it is believed that the person's testimony was truthful. Other interviews were conducted with his co-workers. On April 22, 1982, an individual came forward and admitted to having tampered with an Eberline badge. He had found a badge near a radiation source. This badge had previously been reported as lost. The individual then managed to unclip the badge from his co-worker's clothing, switch the stick-on labels and clip the badge back on the person. The individual who did the tampering testified and signed a statement that it was done to play a joke on his co-worker. The individual who admitted to the offense has been permanently denied access to the site. Although this was an isolated individual personnel error, the General Employee

Training will re-emphasize the importance of treating all matters related to personnel dosimetry as a very serious matter. Failure to follow established procedures will result in disciplinary actions.

2. On April 28, 1982, an employee entered a valve lapping area in the Unit 2 reactor building without signing or fully complying with the requirements of the RWP controlling the area. The individual stated that on the previous day, he had entered the same area wearing shoe covers and gloves for a short duration inspection with the permission of a Health Physics technician. No contamination or exposure resulted from this occurrence. He assumed that these requirements would be the same for another short duration inspection. The individual was counseled by his supervision that as he did not have Health Physics approval to enter for inspection on April 28, his action in entering without complying with and signing the existing RWP was an improper action. He was instructed that another instance of such failure to follow standard procedures would result in further disciplinary action.

- B. 10CFR20.201, "Surveys", requires that licensees perform surveys (evaluations) sufficient to comply with the regulations and to evaluate the extent of radiation hazards that may be present.

Contrary to the above, on May 13, 1982, the licensee failed to perform surveys sufficient to evaluate the extent of the radiation hazard present in the use of an eddy current probe and cable. Use of the device subjected a worker to unnecessary exposure to the skin of the whole body due to undetected high levels of radioactive contamination on the device (26,000 millirad/hour, beta; 500 millirem/hour, gamma).

This is a Severity Level IV violation (Supplement IV).

- C. 10CFR19.12, "Instructions to workers", requires the licensee to keep workers informed as to the presence of radioactive materials, health protection problems associated with exposure to such materials, and precautions and procedures to minimize exposure.

Contrary to the above, on May 13, 1982, the licensee did not inform a worker of the potential for high radioactive contamination on an eddy current probe and cable to be operated by the individual or the precautions and procedures necessary to minimize exposure from the device. Consequently, the worker unknowingly received unnecessary exposure to the skin of the whole body.

This is a Severity Level IV violation (Supplement IV).

- E. Technical Specification 6.8 requires that written procedures be established, implemented and maintained that meet the requirements of Section 5.3 of ANSI-N18.7, 1972 and Appendix "A" of USAEC Regulatory Guide 1.33, November, 1972. Section 5.3.2 of ANSI-N18.7, 1972 recommends that procedures contain precautions to protect personnel and to avoid abnormal situations. Regulatory Guide 1.33, November, 1972, recommends that procedures for maintenance and repair be prepared.

Contrary to the above, no procedures were established and implemented for Eddy Current Testing of the 2B Non-Regeneration Heat Exchanger. The lack of procedures for the testing contributed in-part to a worker receiving an unnecessary exposure to the skin of the whole body of 3.5 rad during testing of the heat exchanger on May 13, 1982.

This is a Severity Level IV violation (Supplement IV).

#### RESPONSE

As detailed in LER 2-82-11/1T, during eddy current testing of the reactor water cleanup heat exchanger, the probe transported contamination from the interior of the tubes to the room and onto the anti-contamination clothing of workers. Chemical decontamination of the heat exchanger had previously been performed and surveys of the heat exchanger tube sheet indicated the decontamination effort had reduced the levels of contamination to approximately 300 mrad/hr smearable. Appropriate protective anti-contamination clothing and fresh air respirators were specified on the Radiation Work Permit based on these surveys and visual inspection of the tubes. However, later investigation revealed that due to a displaced baffle, the decontamination fluid had bypassed the U-tubes of the heat exchanger. When the eddy current probe was inserted into this area and withdrawn, contamination was transmitted to the clothing of the workers. Upon exiting the heat exchanger area, the

individuals removed their protective clothing in accordance with procedures. Because of the high levels of contamination on the clothing, some skin contamination occurred. This was detected when the individuals were frisking after removal of their protective clothing. The maximum skin contamination levels identified were 72 mrad/hr beta, and 2 mrem/hr gamma in the area of one individual's shoulders. Two other individuals experienced contamination of lower values. All three individuals were decontaminated to less than 100 counts per minute. Whole body counts were performed and no significant uptake was noted. During preparation of the Radiation Work Permit associated with the work, the high contamination levels were not anticipated because of the decontamination process previously completed. The Health Physics technician assigned to the area failed to properly monitor the work per 10CFR20.201b. The individual was reassigned to less hazardous operations.

The concerns raised by items B and C of the Notice of Violation both stem from the unanticipated levels of contamination which were present in the tubes of the heat exchangers. Recently, a formal ALARA administrative procedure has been formulated and implemented. This procedure requires detailed pre-planning of expected high exposure jobs by both craft and ALARA representatives and pre-job briefing of workers. It also identifies the need for precautionary and in progress surveys and hold points and requires that workers on these jobs are advised of the contamination and radiation levels involved and precautions to be taken. Additionally, present applicable plant procedures are currently undergoing review and revision to include ALARA guidelines and hold points. In regard to item E, a procedure for eddy current testing of radioactive heat exchangers will be developed by December 1, 1982, or earlier if required to support maintenance activities.

- D. 10CFR20.203(b), "Caution signs, labels and controls," requires each radiation area to be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words: CAUTION, RADIATION AREA.

Contrary to the above, on April 28, 1982, a radiation area resulting from stored radioactive waste outside the Unit 2 and Unit 3 Reactor Buildings was not conspicuously posted with a sign or signs bearing the radiation caution symbol and the words: CAUTION, RADIATION AREA.

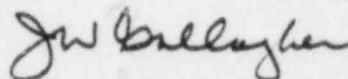
This is a Severity Level V violation (Supplement IV).

RESPONSE

As stated in the inspection report, the ropes and signs which were serving to post this area were found laying on the ground. The ropes had not been securely attached to their mounting points. Upon notification of the event the storage area was properly posted. Lack of attention on the part of the health physics technicians assigned to the area caused the occurrence. They have been reminded to pay more strict attention to the areas to which they are assigned. Additionally, a more reliable configuration of stanchions has been used to better ensure that the rope and posting remain properly secured and clearly visible.

If you have any questions or require additional information, please don't hesitate to contact us.

Very truly yours,

A handwritten signature in dark ink, appearing to read "J.W. Gallagher". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

cc: Peach Bottom  
Site Inspector